

## FURTHER NOTES ON SOUTH AFRICAN SAPOTACEAE.

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### **Chrysophyllum magalismontanum** Sond.

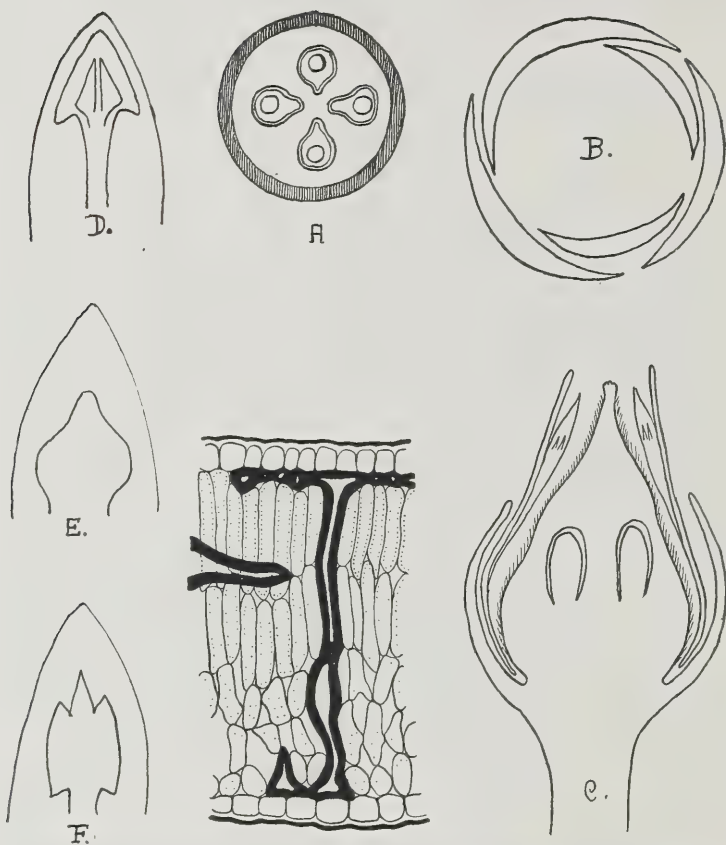
I examined flowers of this species in different habitats. In places in Natal (Magut) and the Transvaal (Hartebeestpoort Dam), where little or no frost occurs, this species develops perfect flowers, with five fertile stamens even before the first rain of the spring. But this is not the case in the Johannesburg area (Kensington) where heavy frost occurs. On the granite hills of Kensington I found shrubs of this species 3 ft. high with imperfect female flowers only, on 21st September, 1947, before the first rains arrived and after a severe drought of several months. There was no trace of male flowers anywhere. These imperfect female flowers had as a rule a four-locular ovary with single ovules. Instead of the usual five stamens in front of the corolla lobes there were only staminodes of different forms. This is *Chrysophyllum Wilmsii* Engl. Cf. Fig. A—F.

About four weeks later, on 18th October, 1947, I examined the flowers of the same shrub again. Rain had fallen since and the hill looked green and fresh. But *Chrysophyllum Wilmsii* with four-locular ovary and five staminodes was not in evidence. All the fresh flowers were perfect specimens of *Chrysophyllum magalismontanum* Sond. with well-developed stamens full of pollen, and the ovaries were five-locular. *Chrysophyllum Wilmsii* Engl. has therefore definitely to be sunk. I propose to call it in future *Chrysophyllum magalismontanum* Sond. *forma depauperata*. The influence of the cooler season and the drought is obvious in causing such a starved form. Cf. Burt Davy, Check list of flowering plants of Natal, 1911, p. 156, and Gerstner No. 6424 (Nat. Herb. Pretoria).

### **Manilkara** Adanson.

Three species of *Manilkara* are recorded in South Africa. What I described in this Journal, April, 1946, as the section *Hexalobatae* of the genus *Mimusops* constitutes the Genus *Manilkara* Adanson. We have, therefore, at least the following species of *Manilkara* in South Africa :—

- (a) **Manilkara concolor** (E. Mey.) Gerstner nov. comb.
- (b) **Manilkara mochisia** (Baker) Gerstner nov. comb. (The necessary figures and notes to these two species can be found in this Journal, April, 1946, under *Mimusops*).



*Chrysophyllum magalismontanum*. A. Horizontal section through the ovary, diagrammatic; B. Horizontal section through the calyx, diagrammatic; C. Vertical section through flower; D, E, F. Different varieties of staminodes (Del. J. Gerstner); G. Transverse section of the leaf-blade of *Manilkara concolor* (Del. H. G. Schweickerdt).

- (c) ***Manilkara Macauleyae*** (Hutch. & Corb.) H. J. Lam. nov. comb. Cf. Gerstner 6061 (Nat. Herb. Pretoria), Vanetzi River, North Transvaal. A leafy specimen, very similar to *Manilkara concolor*, but hairy and with red venation.

Besides the main difference of *Manilkara* flowers being trimerous and *Mimusops* flowers tetramerous, there is also an important vegetative

feature. The leaves of *Manilkara* have sclereids (especially frequent in *Manilkara concolor*) and those of *Mimusops* none. Cf. Fig.

**Labourdonnaisia discolor** Sond.

During my last trips through Natal and Zululand in 1947 and 1948, I examined the flowers of all *Labourdonnaisia*s which I could find.

One good specimen in Albert Park, Durban, showed six corolla appendages which were not even bilobate, but rather tall and simple. In the Hlabisa District I found some dried flowers which had appeared before the first rains, and had six simple lobes without appendages. But one tree with fresh buds nearly open, appearing after the first rains and growing on good black alluvial soil below the sandstones, had perfect flowers with double appendages on the back of each of the six corolla lobes. Besides the rainfall, the habitat (sand, sandstone or black alluvial soil) seems to influence the form of the flowers as well.

I propose therefore to distinguish in *Labourdonnaisia* the following forms caused by weather and soil conditions :—

- (a) *Forma perfecta* with two appendages (a *Manilkara* with the staminodes transformed into fertile stamens) found on black alluvial soil, below the sandstone formation, after good rains.
- (b) *Forma pauperescens* with the two appendages reduced to one which may be simple or bilobate but with fertile stamens. It is mostly found on deep sands near the sea, e.g. Albert Park, Durban.
- (c) *Forma pauperata* with trilobate or tridentate lobes without any appendages. Found on sandstone after short rains. Emgangado, Hlabisa District, September, 1939 with staminodes only.
- (d) *Forma depauperata* with simple lobes without appendages found on sandstone before the first rains, with staminodes only.

I found on the 22nd October, 1948, in Albert Park, Durban, that as last year the tree near the gardener's house again bore flowers of *forma pauperescens* with fertile anthers (Cf. Gerstner 6820, Pretoria and Kirstenbosch). The second tree of this Park nearer to West Street, cited as having stamens and staminodes (Harry Butcher and probably Engler) I found with plenty of flowers of *formae pauperata* and *depauperata*. The sterile anthers were small, ovate, and easily fell off (Cf. Gerstner 6821, Pretoria and Kirstenbosch). It reminds me of the sunk *Chrysophyllum Wilmsii* Engl. from the point of view of the reduced and sterile anthers, i.e. staminodes. The small sterile ovate anthers fall off very easily in this case, and the filaments then resemble the staminodes of the European botanists. I think therefore that *Mimusops natalensis* (Pierre) Engl. has also to be sunk, as Engler's drawings and descriptions suggest that they

have been drawn from specimens of *Labourdonnaisia discolor* Sond., *forma pauperata* with sterile flowers, perhaps from specimens of the same tree in Albert Park. Last year this tree had only flowers which half developed and then dried up.

*Labourdonnaisia discolor* seems to some European botanists to trespass into the realm of different genera (Cf. H. J. Lam, *Blumea*, Vol. 4, No. 2). But as a more detailed and exact observation in the veld reveals, the same occurrence takes place as in the sunk *Chrysophyllum Wilmsii* Engl. with this difference, that here in the case of the starvation forms of *Labourdonnaisia* not only the anthers but also the forms of the corolla lobes and their appendices are more or less essentially affected. This apparently does not occur in other families and may therefore be puzzling to botanists. In my opinion only the perfect flower form should be used for taxonomy and systematics.